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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,267	07/30/2003	Horst Schmidt	67028-014	8706

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EXAMINER	
HUSON, MONICA A	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/630,267	SCHMIDT, HORST	
	Examiner	Art Unit	
	Monica A. Huson	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-22,24,25 and 30-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *33 and 34* is/are allowed.

6)☒ Claim(s) *19-22,24,25,30-32,35 and 36* is/are rejected.

7)☒ Claim(s) *37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the Amendment filed 31 August 2005.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 19-22, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida et al. (U.S. Patent 5,340,528), in view of Kumagai et al. (EP 662383), and in view of Suzuki et al. (U.S. Patent 4,497,359). Regarding Claim 19, Machida et al., hereafter "Machida," show that it is known to carry out a method of molding a molded article (Abstract) comprising introducing molten material into a mold cavity (Column 5, lines 10-13); receiving molten material into a passage adjacent said mold cavity by displacing a movable member comprising a face defining a portion of the mold cavity (Column 5, lines 13-27); and displacing molten material from the adjacent passage toward said mold cavity with said movable member responsive to a biasing force to compensate for changes in volume caused by solidification of the molten material (Column 5, lines 28-49). Machida does not show exerting the biasing force using springs; Machida shows using hydraulic mechanisms (Column 5, lines 28-49). Kumagai et al., hereafter "Kumagai," show that it is known to carry out a method of molding including using a plurality of bevel springs to exert a biasing force (Column 14, lines 12-18). Kumagai and

Machida are combinable because they are concerned with a similar technical field, namely, methods of adjusting internal mold pressure. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Kumagai's springs to adjust the biasing force during Machida's molding process to avoid the need for complicated hydraulic equipment. Machida also does not show determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure. Suzuki et al., hereafter "Suzuki," show that it is known to carry out a method of molding comprising determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure (Column 5, lines 14-36; Column 6, lines 27-39, 42-68; Columns 7-9). Suzuki and Machida are combinable because they are concerned with a similar technical field, namely, methods of controlling internal mold pressure and material volume during molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Suzuki's method of controlling the amount of material received in a mold passage during Machida's molding process in order to avoid overfilling or underfilling the mold cavity.

Regarding Claim 20, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising compensating for local volume changes by pushing molten material from said adjacent passage into said mold cavity (Column 6, lines 16-25), meeting applicant's claim.

Regarding Claim 21, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising maintaining a desired material volume locally

by pushing molten material into the mold cavity (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Regarding Claim 22, Machida shows the process as claimed as discussed in the rejection of Claims 19 and 21 above, including a method wherein the molten material is displaced from the passage proportionate to shrinkage of the molten material during solidification (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Regarding Claim 24, Machida shows the process as claimed as discussed in the rejection of Claim 19 above, including a method comprising the step of applying a force with said movalb member to limit the amount of molten material received within the adjacent passage (Column 5, lines 16-48), meeting applicant's claim.

Regarding Claim 25, Machida shows the process as claimed as discussed in the rejection of Claims 19 and 24 above, including a method comprising the step of applying a force with said movable member to push molten material from said adjacent passage proportionate to a reduction in local molten material volume within the mold cavity (Column 6, lines 16-25, 39-56), meeting applicant's claim.

Claims 30-32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machida, in view of Suzuki et al. (U.S. Patent 4,497,359).

Claims 30-32 are rejected as stated in the paper mailed 3 June 2005.

Regarding Claim 35, Machida shows that it is known to carry out a method [of] molding a molded article (Abstract) comprising introducing molten material into a mold cavity (Column 5, lines 10-13); displacing a movable member into a passage adjacent the mold cavity to

[receive] a determined volume of plastic material (Column 5, lines 13-27); expelling a portion of the determined volume back into the mold cavity during solidification of the plastic material (Column 5, lines 28-49). Machida does not show determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure. Suzuki et al., hereafter "Suzuki," show that it is known to carry out a method of molding comprising determining a volume of material required to compensate for material shrinkage properties in a localized region according to a relationship between material shrinkage properties of the material and injection pressures utilized to introduce the molten material into the mold cavity (Column 5, lines 14-36; Column 6, lines 27-39, 42-68; Columns 7-9). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Suzuki's method of controlling the amount of material received in a mold passage during Machida's molding process in order to avoid overfilling or underfilling the mold cavity.

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Machida and Suzuki, further in view of Ditto (U.S. Patent 4,076,788). Machida shows the process as claimed as discussed in the rejection of Claim 35 above, but he does not show a method wherein the movable member is flush with a surface of the mold cavity. Ditto shows that it is known to carry out a method including the step of biasing the movable member toward a position where a face of the movable member is flush with a surface of the cavity prior to introduction of molten plastic (Figure 2). Ditto and Machida are combinable because they are concerned with a similar technical field, namely, methods of molding planar plastic articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Ditto's

movable member positioning during Machida's molding process in order to form an article having a particular end-use configuration.

Response to Arguments

Applicant's arguments filed 31 August 2005 have been fully considered but they are not persuasive.

Applicant contends that the combination of Machida and Kamagai does not suggest the instant invention because, if combined, Machida would be rendered inoperable for its intended purpose. In other words, "the addition of springs to the ejector pins of [Machida] would destroy the ejection function...cause an uneven ejection force on the part...would teach away from such a modification". This is not persuasive because Kamagai discloses using the biasing springs and ejector pins (Figures 8, step 1; Figures 11, 12). Therefore, since Kamagai operates successfully with both biasing springs and ejector pins, it is believed that combining his teachings of biasing springs with Machida's ejector pins would provide the same benefits to Machida as are realized by Kamagai.

Applicant contends that Suzuki does not show the instant invention because he does not show determining an amount of said molten material received within said passage according to a relationship between material shrinkage and injection pressure. This is not persuasive because Suzuki has a very involved discussion on the volume and injection pressure of a molding material needed to compensate for the solidification shrinkage of the material in the cavity (See Columns 7-9, especially Column 9, lines 25-36).

Allowable Subject Matter

Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 33 and 34 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art of record neither teaches nor suggests the claimed method for molding an article including determining a biasing force for biasing movement of a movable member against injection pressures such that movement of the movable member within a passage is substantially equal to twice the amount of height loss caused by material shrinkage.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Monica A Huson
November 14, 2005

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER